I Scream, You Scream, We all Scream For Ice Cream!

Introduction

How do old-fashioned homemade ice cream makers work? You will investigate the answer to that question as well as enjoy some homemade ice cream in this activity.

Materials

- bottom half of 2 L pop bottle
- plastic cup
- spoon
- ice
- rock salt
- ice cream mix
- thermometer

Procedure

1. Put on goggles. Make certain your work area is thoroughly clean. Fill the pop bottle bottom almost full of ice chips and generously sprinkle rock salt on top.
2. Pour ice cream mix into plastic cup until it is about 2 inches deep. This should be about ½ cup of ice cream mix.
3. Carefully work the bottom of the cup of the ice cream mix down into the ice / rock salt mixture. The top of the ice cream mix should be at or below the level of the ice.
4. Stir occasionally with a spoon. As ice cream starts to solidify, you may wish to stir more frequently. Add rock salt to ice as needed, but be careful not to get salt in your ice cream!
5. Just before ice cream looks ready, record the temperature of the ice / rock salt mixture, but do not let the thermometer touch the ice cream.
6. When ice cream is the consistency of soft serve, it is done. Remove cup from ice / rock salt and ENJOY!
7. Clean up as directed by your teacher and wash your hands.

Data Table

Temperature of Ice / Rock Salt Mixture: _____°C

Analysis and Calculations

1. You probably used about 500 g of ice. How many grams of rock salt were dissolved in it?
2. How can you relate making homemade ice cream to salting sidewalks and roads during the winter?
3. How do the new ice cream makers (like Donvier®) work?